

Application Serial No. 10/049,179
Amendment dated June 10, 2004
Reply to Office Action mailed May 11, 2004 (Paper No. 5)

Amendments to the Specification:

Please amend the paragraph at page 2, lines 10-13 as follows:

B1 Fig. 14 shows a front view (a), a bottom view (b) and a left side view (c) of the conventional objective lens driving apparatus described in the Official Basette of Japanese Laid-open Public Patent Application Hei 5-342607.

Please amend the paragraph at page 15, lines 22-23 as follows:

B2 "Member" means an optional member. Typically, it is a lens protector (FIG. 13 (b) and (c)).

Please amend the paragraph at page 20, lines 17-25 as follows:

B3 FIG. 1 shows a front view (a), a sectional view (b) taken along the A-A line and a sectional view (c) taken along the B-B line of a movable section of the objective lens driving apparatus of embodiment 1 according to the present invention. FIG. 2 shows a perspective view in schematic form depicting the configuration of the reinforcing rib 13a of the objective lens driving apparatus of embodiment 1 (The reinforcing rib 13a is represented larger than life.)

Please amend the paragraph at page 21, lines 16-25 as follows:

B4 As shown in FIG. 1 (b) and FIG. 2, the reinforcing rib 13a of the lens holder 13 closely contacts with the support printed board 5 protruding from the side surfaces of the lens holder (front surface and back surface) (both ends of each of two support printed boards protrude from the side surfaces of the lens holder, respectively (at four locations in total)), thereby reinforcing the base of the support printed board 5. Preferably, the contact surfaces of the support printed board 5 and the reinforcing rib 13a are fixed to each other by adhesive.

Please amend the paragraph at page 22, line 23 through page 23, line 1 as follows:

B5 Referring to a sectional view (b) taken along the A-A line of FIG. 1 (a sectional view viewed from right side along the A-A line of the front view of FIG. 1) and FIG. 2, arrangement method of windings of coils will be explained hereinafter.

Please amend the paragraph at page 24, lines 1-6 as follows:

B6 Referring to a cross sectional view (c) taken along the B-B line of FIG. 1, wiring paths 3a and 3b of the focusing coil 3 between the coil restraining part 5a of the support printed board 5 and the focusing coil winding part of the lens holder 13 having the reinforcing ribs will be described.

Please amend the paragraph at page 26, lines 8-14 as follows:

B7 FIG. 4 shows a front view (a), a sectional view (b), taken along the A-A line of a movable section of the objective lens driving apparatus of embodiment 2. FIG. 5 shows a perspective view in schematic form depicting the configuration of the reinforcing rib 14a of the objective lens driving apparatus of embodiment 2. (The reinforcing rib is presented larger than life.)[[.]]

Please amend the paragraph at page 27, lines 6-13 as follows:

B8 As shown in FIG. 4 and FIG. 5, the reinforcing rib 14a of the lens holder 14 with reinforcing ribs closely contacts with the support printed board 15 protruding from the side surfaces of the lens holder (front surface and back surface) (both ends of each of two support printed boards protrude from the side surfaces of the lens holder, respectively (at four locations in total)), thereby reinforcing the base of the support printed board 15.

Please amend the paragraph at page 28, lines 11-15 as follows:

B9 Referring to a sectional view (b) taken along the A-A line of FIG. 4 (a sectional view viewed from right side along the A-A line of the front view of FIG. 4) and FIG. 5 arrangement method of winding of coils will be explained hereinafter.

Please amend the paragraph at page 29, lines 21-25 as follows:

B10 In the objective lens driving apparatus of embodiment 2, a wiring path of the focusing coil 3 is guided by the notches 15b and 15c of the support printed board with notches so as to be fixed at the path 3b (a sectional view taken along the B-B line of FIG. 1(a) depicted in FIG. 1(c)).

Please amend the paragraph at page 31, lines 6-12 as follows:

B11 FIG. 6 shows a front view (a), a sectional view (b) taken along the A-A line of a movable section of the objective lens driving apparatus of embodiment 3. FIG. 7 shows a perspective view in schematic form depicting the configuration of the reinforcing rib 16a of the objective

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B11
Circled lens driving apparatus of embodiment 3. (The reinforcing rib is represented larger than life.)

Please amend the paragraph at page 32, lines 3-10 as follows:

B12 As shown in FIG. 6 and FIG. 7, the reinforcing rib 16a of the lens holder 16 closely contacts with the support printed board 5 protruding from the side surfaces of the lens holder (front surface and back surface) (both ends of each of two support printed boards protrude from the side surfaces of the lens holder, respectively (at four locations in total)), thereby reinforcing the base of the support printed board.

Please amend the paragraph at page 33, lines 5-9 as follows:

B13 Referring to a sectional view (b) taken along the A-A line of FIG. 6 (a sectional view viewed from right side along the A-A line of the front view of FIG. 6) and FIG. 7, arrangement method of windings of coils will be explained hereinafter.

Please amend the paragraph at page 36, lines 3-9 as follows:

B14 FIG. 6 shows a front view (a), a sectional view (b) taken along the A-A line of a movable section of the objective lens driving apparatus of embodiment 4. FIG. 9 shows a perspective view in schematic form depicting the configuration of the reinforcing rib 17a of the objective lens driving apparatus of embodiment 4. (The reinforcing rib is represented larger than life.)[[.]]

Please amend the paragraph at page 36, line 26 through page 27, line 7 as follows:

B15 As shown in FIG. 8 and FIG. 9, the reinforcing rib 17a of the lens holder 17 closely contacts with the support printed board 5 protruding from the side surfaces of the lens holder (front surface and back surface) (both ends of each of two support printed boards protrude from the side surfaces of the lens holder, respectively (at four locations in total)), thereby reinforcing the base of the support printed board.

Please amend the paragraph at page 38, lines 1-5 as follows:

B16 Referring to a sectional view (b) taken along the A-A line of FIG. 8 (a sectional view viewed from right side along the A-A line of the front view of FIG. 8) and FIG. 9, arrangement method of windings of coils will be explained hereinafter.

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Please amend the paragraph at page 39, lines 8-12 as follows:

B17 In the objective lens driving apparatus of embodiment 4, a wiring path of the focusing coil 3 is guided by the groove of the reinforcing rib so as to be fixed at the path 3b (a sectional view (c) taken along the B-B line of FIG. 1).

Please amend the paragraph at page 40, line 25 through page 41, line 10 as follows:

B18 FIG. 10 shows a front view (a), a right side view (b) (showing the appearance of the apparatus from which the support printed board 5 is removed), and a sectional view (c) taken along the B-B line of a movable section of the objective lens driving apparatus of embodiment 5. FIG. 11(a) shows a perspective view in schematic form depicting the configuration of the reinforcing rib of the objective lens driving apparatus of embodiment 5. (The reinforcing rib is represented larger than life.), and FIGs. 11(b) and (c) show the manufacturing method of the objective lens driving apparatus according to this invention.